

Forward Technology Solar Cell Experiment (FTSCE)



Naval Research Laboratory & U.S. Naval Academy

TECHNOLOGY

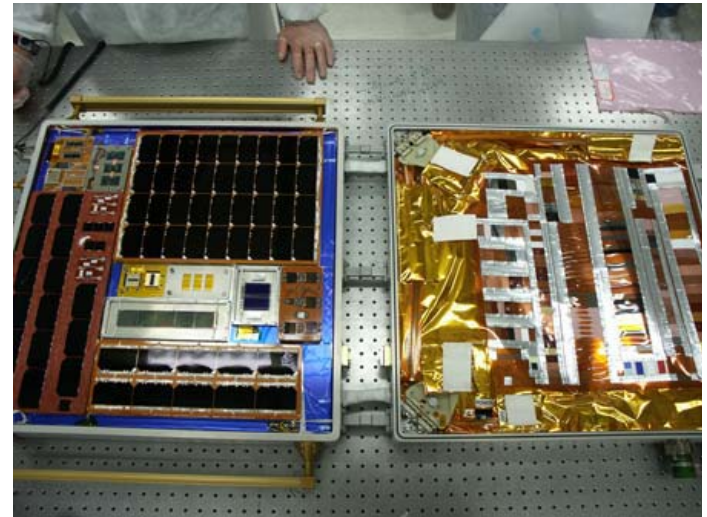
The Forward Technology Solar Cell Experiment (FTSCE) demonstrated the survivability of new solar technologies in the space environment and validated the present ground test protocol. This was done as a collaboration between NASA Glenn Research Center (GRC), the Naval Research Laboratory (NRL), and the U.S. Naval Academy (USNA) as part of the Fifth Materials on the International Space Station Experiment (MISSE-5).

COMMERCIAL APPLICATION

- ◆ The FTSCE Experiments will provide new advances in solar cell material that will withstand the extreme environment of space.
- ◆ Using the electronics and software developed and built at GRC, the solar cell performance is able to be measured using a novel I-V (current vs voltage) data logger in tandem with sun-position sensors and temperature sensors.

SOCIAL / ECONOMIC BENEFIT

- ◆ The experiment tests new materials that are lighter and more cost efficient.
- ◆ The MISSE-5 experiment is unique from the other MISSE experiments because of the active nature of the payload. The experiment package not only transmits data to the ground, but it also archives and stores up to two years of data in flash memory.



MISSE-5 PEC showing solar cell and material samples.

NASA APPLICATIONS

From the data received in this experiment, new solar cells could be developed that will be used to power space systems traveling in harsh radiation environments for periods exceeding the limits of current solar cell technologies.

NASA Contact: Lawrence C. Greer & Michael J. Krasowski
NRL Contact: Robert Walters & Phillip Jenkins
USNA Contact: Robert Bruninga
Date of Technology: 2007